



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,091	08/31/2001	David R. Kranz	12942.0067.N	1349

7590 09/20/2005

CANTOR COLBURN LLP
55 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

EXAMINER

STRICKLAND, JONAS N

ART UNIT	PAPER NUMBER
----------	--------------

1754

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,091

Applicant(s)

KRANZ, DAVID R.

Examiner

Jonas N. Strickland

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Detailed Action is in response to the amendment filed on 7/7/05. Claims 1-21 are currently pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guth et al. (US Patent 5,599,758) in view of Wintrell (US Patent 4,153,426).

Applicant claims a process for removing gaseous pollutants from combustion gases comprising contacting a catalyst absorber with said combustion gases until the catalyst absorber is at least partially saturated, the improvement comprising regenerating the catalyst absorber with a regeneration stream of syngas produced in a gasification unit.

Guth et al. discloses a process for the regeneration of a catalyst/absorber after extended exposure to pollutants in the combustion gases of engines, wherein the regeneration gas is comprised of a mixture of hydrogen and carbon monoxide (see

Art Unit: 1754

abstract and col. 3, lines 1-7). However, Guth et al. does not disclose wherein the synthesis gas is produced in a gasification unit.

Wintrell teaches a method and apparatus for producing synthesis gas comprised of hydrogen and carbon monoxide by using a gasifier (see abstract; col. 1, lines 13-26).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Guth et al., based on the teachings of Wintrell, by using synthesis gas produced from a gasification unit, since Wintrell teaches wherein it is known in the art to produce carbon monoxide and hydrogen in a gasifier unit. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art, would have expected a process for producing synthesis gas as taught by Wintrell to have been similarly useful and applicable to one of ordinary skill in the art for a process which utilizes synthesis gas as taught by Guth et al. Wintrell continues to teach wherein the production of synthesis gas can be used for various purposes. Therefore, it would have been obvious to use the synthesis gas produced by Wintrell in the process for regeneration as taught by Guth et al., which teaches regenerating a catalyst absorber with synthesis gas.

With respect to claims 2-4, Guth et al. discloses an oxidation catalyst comprised of platinum, disposed on a high surface area support (see claim 13). With respect to claim 5, Guth et al. discloses wherein the support may comprise alumina (col. 1, lines 66-67). With respect to claim 7, Guth et al. discloses wherein the oxidation catalyst is coated with an absorber selected from hydroxides, carbonate, bicarbonate and a mixture of an alkali or alkaline earth (see claim 13).

Art Unit: 1754

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guth et al. (US Patent 5,599,758) in view of Wintrell (US Patent 4,153,426) as applied to claims 1-5 and 7 above, and further in view of Campbell et al. (US Patent 5,451,558).

Applicant claims with respect to claim 6, wherein the high surface area support is coated on a ceramic or metal matrix structure. The teachings of Guth et al. in view of Wintrell have been discussed with respect to claims 1-5 and 7, and both references do not disclose wherein the high surface area support is coated on a ceramic or metal matrix structure.

However, Campbell et al. teaches a process for the reaction and absorption of gaseous air pollutants. Campbell et al. continues to teach wherein a catalyst absorber is used made of alumina/platinum/carbonate salt (see abstract). Campbell et al. continues to teach wherein the high surface area support may be coated on a ceramic or metal matrix structure (col. 4, lines 12-20).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Guth et al. in view of Wintrell, based on the teachings of Campbell et al., by coating a high surface area support onto a ceramic or metal matrix structure, because Campbell et al. teaches wherein a high surface area support may be coated on a ceramic or metal matrix structure. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art, would have expected a process for removing gaseous pollutants using a catalyst absorber as taught by Campbell et al., to have been similarly useful and applicable to a process for removing gaseous pollutants using a catalyst absorber as taught by Guth et al. in view of Wintrell.

Art Unit: 1754

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guth et al. (US Patent 5,599,758) in view of Wintrell (US Patent 4,153,426) as applied to claims 1-5 and 7 above, and further in view of Courty et al. (US Patent 4,088,736).

Applicant claims with respect to claims 8 and 9, wherein the syngas is cleaned in an acid gas removal unit and wherein the acid gas removal unit removes a substantial portion of any sulfur components in the synthesis gas. The teachings of Guth et al. and Wintrell have been discussed with respect to claims 1-5 and 7 and the references are silent in regards to the teachings of claims 8 and 9.

However, Courty et al. teaches a process for purifying a gas containing hydrogen sulfide from a gasification unit having carbon dioxide (col. 1, lines 20-25), as well as hydrogen and/or carbon monoxide, synthesis gas (col. 3, lines 60-61). Courty et al. continues to teach wherein the hydrogen sulfide is treated with a mass of zinc oxide (see abstract and col. 1, lines 15-46). Courty et al. continues to teach wherein during regeneration cycles zinc oxide cleans the regeneration gas of gaseous sulfur compounds (col. 4, lines 16-26).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Guth et al. in view of Wintrell, which teaches producing a carbon dioxide and hydrogen regeneration gas from a gasification unit and reducing the amount of pollutants produced from the process, such as hydrogen sulfide, based on the teachings of Courty et al., which teaches a process for reducing hydrogen sulfide from a gasification process by passing the gas comprised of synthesis gas and acidic gases, such as hydrogen sulfide and other sulfur compounds onto a bed of zinc oxide. Such

Art Unit: 1754

modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art, would have expected a gasification process, which includes reducing pollutants, such as hydrogen sulfide from a gas stream comprised of synthesis gas as taught by Courty et al., to be similarly useful and applicable to a gasification process for wherein synthesis gas is used as a regeneration gas produced from a gasification unit as taught by Guth et al. in view of Wintrell. While Guth et al. and Wintrell do not teach acid gas removal, Courty clearly teaches wherein acidic gases may be removed from gaseous effluents containing synthesis gases from gasification plants of solid, liquid, and gaseous combustibles (col. 3, lines 57-60).

7. Claims 10-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guth et al. (US Patent 5,599,758) in view of Wintrell (US Patent 4,153,426) and Courty et al. (US Patent 4,088,736) as applied to claims 1-5 and 7-9 above, and further in view of Debbage et al. (US Patent 5,762,885).

Applicant claims with respect to claims 10-21, a shift reactor, a turbine generator and a heat recovery steam generator, which are not taught by the already cited prior art.

However, Debbage et al discloses an apparatus for removing contaminants from gaseous streams. The reference discloses an apparatus for regenerating a catalyst absorber after contact with a combustion exhaust. With respect to claims 10-12, Debbage et al. discloses a shift reactor, a shift catalyst, and wherein the shift catalyst converts carbon monoxide to hydrogen and carbon dioxide (col. 5, lines 28-45). With respect to claim 13, it would have been obvious to one of ordinary skill in the art to expect the process disclosed by Debbage et al. in view of Courty to convert a carbonyl

Art Unit: 1754

sulfide to hydrogen sulfide and carbon dioxide, since Debbage et al. teaches a shift catalyst and shift reactor and Courty teaches a gas which comprises COS (col. 3, line 62). With respect to claim 16 and 21, Debbage et al continues to teach a turbine exhaust and wherein a portion of the regeneration synthesis gas is recycled back to the exhaust to produce power in the turbine generator (see Figure 1 and col. 7, lines 40-53). Debbage et al continues to disclose a process using a heat recovery steam generator, with respect to claims 17-19 (col. 4, lines 36-53).

It would have been obvious to combine the cited references, since all of the references are directed towards treating gaseous pollutants using catalyst absorber systems.

Response to Arguments

8. Applicant's arguments filed 7/7/2005 have been fully considered but they are not persuasive.

Applicant argues that the synthesis gas released from the teachings of Wintrell is too high in sulfur content to be directly utilized in the regeneration of an absorber catalyst as taught by Guth. It should be noted that the Examiner has applied Guth in order to disclose the use synthesis in regenerating a catalyst absorber system. Wintrell has been applied in order to teach wherein it is known in the art to produce synthesis gas from a gasification unit. Therefore, it would have been obvious to one of ordinary skill in the art to produce synthesis gas from a gasification unit, and then use the synthesis gas to regenerate a catalyst absorber system.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the amount of the sulfur content within the regeneration gas stream) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


Art Unit: 1754

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonas N. Strickland whose telephone number is 571-272-1359. The examiner can normally be reached on M-TH, 7:30-5:00, off 1st Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jonas N. Strickland
September 8, 2005


STANLEY S. SILVERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700